

CHAPTER 28

Justification of the proposal

ALBURY TO ILLABO ENVIRONMENTAL IMPACT STATEMENT

ARTC

INLAND
RAIL
An Australian Government Initiative

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28. Justification of the proposal

This chapter summarises the Albury to Illabo (A2I) section of the Inland Rail program (the proposal) for which approval is sought and provides the justification for it, taking into account biophysical, economic and social considerations. This chapter, together with Chapter 27: Approach to mitigation and management, provides a synthesis of the environmental impact statement (EIS) for the proposal.

28.1 Summary of the proposal for approval

28.1.1 Overview of the proposal

The proposal involves enhancement works to structures and sections of track along 185 kilometres (km) of the existing operational standard-gauge railway between Albury and Illabo to accommodate double-stacked freight trains up to 1,800 metres (m) long and 6.5 m high.

28.1.2 Location

The proposal is generally within the existing rail corridor extending from the town of Albury on the Victorian–NSW border to around 3 km to the north-east of Illabo. The alignment passes through two major regional towns, Albury and Wagga Wagga, NSW, and several smaller regional towns. Works are proposed at 24 enhancement sites along the ‘Main South Line’ corridor.

28.1.3 Key design features

The key features of the proposal include:

- ▶ adjustments to approximately 44 km of track across 14 enhancement sites to accommodate the vertical and horizontal clearances according to Inland Rail clearance specifications, comprising:
 - ▶ realignment of track within the rail corridor at 14 enhancement sites
 - ▶ lowering of track up to 1.6 m at three enhancement sites
- ▶ changes to bridges and culverts at enhancement sites to allow track realignment, as follows:
 - ▶ replacement of two road bridges and adjustments to adjoining intersections
 - ▶ replacement of three pedestrian bridges
 - ▶ demolition of two redundant pedestrian bridges
 - ▶ modifications to four rail bridges
- ▶ ancillary works, including adjustments to nine level crossings, modifications to drainage and road infrastructure, signalling infrastructure, fencing, signage, and services and utilities.

28.1.4 Construction features

Construction of the proposal would require:

- ▶ construction compounds (including laydown areas) and other areas needed to facilitate construction works
- ▶ temporary changes to the road network, including roads closures to undertake works on road bridges and level crossings
- ▶ other ancillary works.

28.1.5 Operation

The proposal would form part of the rail network managed and maintained by ARTC. Train services would be provided by a variety of operators. The A2I section is proposed to carry an average of up to 18 freight trains per day in 2025, increasing to 20 freight trains per day in 2040.

The proposal would enable the use of double-stacked trains along its entire length. Inland Rail would operate 24 hours per day and would initially accommodate double-stacked freight trains up to 6.5 m high and up to 1,800 m long. The possible future use of the railway between Albury and Illabo by freight trains up to 3,600 m long would be subject to separate assessment. Freight train speeds would range from 60 to 115 km/hr, which is consistent with current train speeds.

Standard ARTC maintenance activities would be undertaken during operations. Typically, these activities include minor maintenance works, such as bridge and culvert inspections, rail grinding and track tamping, through to major maintenance, such as reconditioning of track and topping up of ballast as required.

28.1.6 Timing

Subject to approval, further design and procurement, construction of the proposal is planned to start in early 2024 and is expected to take about 16 months. The proposal would be fully operational in 2025, with enhancement sites progressively commissioned on completion of construction. Inland Rail as a whole would be operational once all 13 sections are complete, which is estimated to be in 2027.

28.1.7 Statutory requirements

The proposal is Critical State Significant Infrastructure (CSSI) and is subject to approval by the NSW Minister for Planning.

This EIS has been prepared to support ARTC's application for approval of the proposal in accordance with the requirements of Division 5.2 of the *Environmental Planning and Assessment Act 1979* (NSW) (EP&A Act). The EIS addresses the Secretary's environmental assessment requirements (SEARs) for the proposal (refer to Appendix A: Secretary's environmental assessment requirements) and the requirements of the Environmental Planning and Assessment Regulation 2021 (refer to Appendix C: Statutory compliance). Preparation of the EIS has considered the *State Significant Infrastructure Guidelines* (DPIE, 2021c) and *Undertaking Engagement Guidelines for State Significant Projects* (DPIE, 2021e) (refer to Appendix I: Rapid Assessment Framework checklist).

The proposal is not a controlled action and, therefore, approval under the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act) is not required.

Other approvals required for the proposal include:

- ▶ a modified and new Environmental Protection Licence (EPL) under the *Protection of the Environment Operations Act 1997* (NSW) as required for the construction and operation of the proposal
- ▶ authorisation under the *Crown Land Management Act 2016* (NSW) to allow occupation of Crown land located outside the ARTC lease area
- ▶ approval under section 138 of the *Roads Act 1993* (NSW) where works are required on or over public roads
- ▶ a water access licence under the *Water Management Act 2000* (NSW) for any groundwater take during excavation that is greater than three megalitres per year or other water take that needs a water access licence, subject to confirmation during detailed design
- ▶ approval under the *Marine Safety Act 1998* (NSW) for access restrictions on the Murray River during construction on the Murray River bridge.

28.2 Summary of Impacts

28.2.1 Outline of strategies to avoid or minimise impacts

Potential impacts on the environment were identified early in the proposal development, and approaches to avoid or reduce impacts were identified during the options assessment and reference design. Engagement with stakeholders and the views of the community has contributed to the project team's understanding of the potential impacts and has enabled the design to respond to and minimise potential impacts, where practicable.

Options development has been an integral part of the overall design process for the proposal. An iterative process of option selection, design development and evaluation has been undertaken to define the proposal. The preferred enhancement work options were identified as having generally fewer environmental and land use limitations compared to other potential enhancement options (refer to sections 6.3 and 6.4 of this EIS for further information).

A key objective of the proposal has been to minimise the potential for environmental and community impacts by maximising use of the existing rail corridor. The reference design process was iterative and dependent on rigorous engineering and ongoing stakeholder engagement, and has involved refinements at each stage. Examples of how the proposal has considered community feedback within the design include the:

- ▶ addition of *Disability Discrimination Act 1992* (Cth) (DDA) compliant ramps on the eastern and western connections for the pedestrian bridge at Albury Station
- ▶ enhancement of the shared user path design on the replacement Edmondson Street bridge and Kemp Street bridge, to meet the needs of the adjacent schools and the wider community. ARTC is committed to revising the existing design to achieve DDA compliance for pedestrians at the Edmondson Street bridge and Kemp Street bridge enhancement sites. To achieve this, it is expected that a footbridge independent of the road bridge may be required as a substitute for the footpath on one side of the road bridge

- ▶ replacement rather than removal of the pedestrian bridge at Wagga Wagga Station to meet the needs of community and schools
- ▶ refinement of traffic and pedestrian detours for both Junee and Wagga Wagga during construction.

Development of the construction methodology involved minimising the area outside the rail corridor directly impacted by the proposal. The proposal site is primarily within the rail corridor with direct impacts to sensitive environmental areas, private property and open space avoided as far as practicable. Staging of construction was also refined to minimise impacts to traffic and transport in urban areas, for example staging the closure of bridges over the rail corridor in Wagga Wagga to ensure that at least one bridge would always be open. Adjustments were also made to avoid impacts to Aboriginal heritage. At the Murray River bridge enhancement site, the temporary creek crossing at Oddies Creek was removed, access via Townsend Street was restricted to light vehicles only, and grading works to Townsend Street were limited to the existing zone of surface disturbance, to avoid and minimise impacts to an area of archaeological potential.

28.2.2 Impacts that have not been avoided

A proposal of this scale would inevitably have some impacts on the local environment and community, particularly during construction and because enhancement works would occur along an existing rail corridor. Chapters 9 to 26 of this EIS provide an assessment of the potential impacts of the proposal and identify the associated mitigation measures proposed. The key potential impacts requiring mitigation and management are summarised in Table 28-1.

The environmental performance of the proposal would be managed through implementing the proposed mitigation measures, the Construction Environmental Management Plan (CEMP) and operational procedures (refer to Chapter 27). Implementation of the environmental management plans during construction and operation would also ensure compliance with relevant legislation and any conditions of approval. It would be expected that many of the impacts detailed in Table 28-1 would be minimised by the mitigation and management measures proposed.

TABLE 28-1 SUMMARY OF KEY IMPACTS THAT HAVE NOT BEEN AVOIDED

Issue	Key potential impacts
Traffic and transport	Construction <p>Temporary local traffic impacts are predicted during construction. Traffic diversions are required during road bridge works at Edmondson Street bridge, Wagga Wagga (about nine months); Kemp Street bridge, Junee (about eight months); and level-crossings at Henty, and four locations along the Junee to Illabo clearances enhancement site (approximately three to five days at each level crossing). The temporary diversions would increase travel times and the performance of certain roads and intersections along these routes would be impacted. The closure of the Edmondson Street bridge in Wagga Wagga in particular would result in significant delays during peak-hour periods (based on worst case assumptions) due to increased road congestion at intersections that are already constrained. At Junee, a short-term diversion onto local roads would be required during intersection works at the Olympic Highway / Kemp Street intersection.</p> <p>Access for active transport across the rail corridor would be disrupted during construction at Albury, Wagga Wagga and Junee. In addition to closure of road bridges, diversions are required for the closure of Albury Station pedestrian bridge, Albury (about four months), Cassidy Parade pedestrian bridge, Wagga Wagga (about six months) and Wagga Wagga Station pedestrian bridge, Wagga Wagga (about six months). These diversions would increase travel times for pedestrians and cyclists. The bridge works in Wagga Wagga have been staged to keep one bridge open at all times and to limit the duration and cumulative impacts on the community in response to consultation with local stakeholders.</p>
	Operation <p>Operation of the proposal would involve larger and more frequent freight trains passing along the corridor, increasing the freight transportation capacity between Albury and Illabo. Additional level crossing closure would be caused by the more frequent passing of trains. Based on a train operating at a typical speed of 80 km/h, vehicles would need to stop at a level crossing for around two minutes, which includes the train pass by time and the closure and opening of the boom gates. There would be no change to current freight train speeds as a result of the proposal and, as such, the duration of the level crossing closure would be the same with and without the proposal. The number of vehicles stopping for level crossing closure in peak hour would also be the same with and without the proposal.</p> <p>Two level crossings along the Junee to Illabo clearances would be upgraded from passive to active level crossings. After a level crossing is upgraded from passive to active, road users would experience an additional 15 seconds of closure time due to the closing and opening of boom gates.</p>

Issue	Key potential impacts
Non-Aboriginal heritage	<p>The proposal would have direct and indirect impacts to multiple state, local and Section 170 heritage-listed items. The proposal would result in major cumulative impact due to the collective impact on railway heritage values. Major impacts to unlisted or local railway heritage include demolition and replacement of the Cassidy Parade pedestrian bridge (a Section 170 register item), Edmondson Street bridge (unregistered potential heritage item) and Kemp Street bridge (unregistered potential heritage item). Major impacts to heritage would also result from ground disturbance to the Yerong Creek Railway Station archaeological site (unregistered potential heritage item). Moderate impacts to four state heritage railway items are proposed from alterations to the Murray River bridge, the replacement of the pedestrian bridge and other changes in the Albury Rail Yard and removal of two pedestrian bridges at Culcairn and Junee.</p>
Land use and property	<p>Construction</p> <p>Key land use impacts primarily occur during construction as no private land acquisition would be required for operation of the proposal. Construction of the proposal would require the temporary occupation of around 27 hectares (ha) of land outside the rail corridor, which primarily consists of road reserves and open areas adjacent to the enhancement sites. Where land is temporarily required outside of the proposal site, the area required of a property would only be a small portion of the total property and would not impact ongoing use, viability or productivity of the broader property during construction, except at the Billy Hughes bridge enhancement site, where a private property currently leased for sheep grazing would be required.</p> <p>Key impacts to land use during construction are temporary loss of access to open areas; access impacts from level crossing and bridge works; construction areas intersecting with the grain terminal operational area; and increased biosecurity risks from construction activities. Potential property access impacts were raised as a key concern for community and councils during engagement with key stakeholders.</p> <p>Operation</p> <p>No private land would be permanently acquired for the proposal. An easement would be established on private property (Lot 2 DP543801) at the Edmondson Street bridge enhancement site. The 25-m wide easement would be established to maintain access to a power utility that would be relocated along the western side of the Edmondson Street bridge, south of the rail corridor.</p>
Social	<p>Construction</p> <p>During construction, the proposal would result in positive social impacts through the creation of opportunities for direct employment as well as procurement for the supply of materials and services. The most substantial negative social impacts would predominantly be generated by the impact of the construction workforce and accommodation requirements for the proposal, reduced mobility resulting from delays and diversions of existing transport routes as well as impacts to local amenity. The temporary amenity impacts near enhancement sites would be from noise, visual and air quality generated by construction works, with greater impacts in areas with larger construction works such as road bridge replacement works in Wagga Wagga and Junee. There would be an unequal distribution of the potential impacts and benefits of the proposal within the community given the spatial characteristics of these impacts and benefits, with communities adjacent to the enhancement sites (particularly vulnerable groups) experiencing a larger number of negative impacts.</p> <p>Operation</p> <p>During operation, the proposal would benefit the community by improving safety and accessibility across the rail corridor through the provision of three new DDA-compliant pedestrian bridges in Albury and Wagga Wagga, and the inclusion of shared paths on the new road bridges in Wagga Wagga and Junee. Further consultation with Wagga Wagga City Council and Junee Shire Council has confirmed the requirement for achieving DDA-compliant pedestrian access at the Edmondson Street bridge and Kemp Street bridge enhancement sites. ARTC is committed to revising the existing design to achieve DDA compliance. To achieve this, it is expected that a footbridge independent of the road bridge may be required as a substitute for the footpath on one side of the road bridge.</p> <p>Adverse amenity impacts would be experienced in some areas due to increases in operational rail noise, the presence of permanent proposal features and more frequent level crossing closures potentially exacerbating social severance across the rail corridor.</p>

Issue	Key potential impacts
Economic	<p>Construction</p> <p>During construction of the proposal, local economies would likely experience increased employment and training opportunities, with an estimated workforce of up to 770 personnel required during the peak construction period. Flow-on local and regional economic benefits would also be generated, as the proposal would create opportunities for the supply of materials and services in the regional study area.</p> <p>Potential impacts associated with the inflow of the workforce into the local area and workforce accommodation demand, as well as temporary changes to local amenity, which may reduce visitation and income for local tourism industries. A low temporary economic impact may occur for local businesses surrounding the proposal due to the temporary road closures and loss of parking; however, businesses may obtain additional income through the presence of the construction workforce, which may offset potential negative impacts.</p> <p>Operation</p> <p>Operation of the proposal would increase competition between road and rail freight modes, driving savings in freight costs, which would benefit producers, consumers and the regional economic catchment area. The proposal would not result in significant changes to travel times or distances by road transport, with no permanent impacts on agricultural land or significant impacts on the tourism industry.</p>
Noise and vibration	<p>Construction</p> <p>As the proposal is within an operational rail corridor, some construction activities would be required to be undertaken outside of the primary construction hours as well as during rail possessions or track occupancy authorisations (TOA) on a 24-hour rotating shift basis.</p> <p>The potential construction noise impacts would vary between enhancement sites depending on the intensity and construction activity; however, the construction work would result in exceedances of relevant criteria at numerous receivers around the proposal site. Exceedance of noise management levels (NMLs) for all periods would occur, despite implementation of reasonable and feasible mitigation measures, particularly for works that take place in and around urban areas. The highest noise impacts are predicted to be experienced during rail possessions, particularly in Albury and Wagga Wagga, due to the scale of works and number of nearby receivers. In most cases, the duration of the construction activities will be relatively short lived or with respite periods as they are constrained by rail possessions and TOA duration.</p> <p>Operation</p> <p>The increase in frequency and size of freight trains, and the modifications to the rail corridor, would potentially result in operational rail noise impacts. The predicted noise levels exceeded the trigger values for airborne noise at 15 sensitive receivers. Eight of these receivers are non-residential near seven enhancements sites, and seven are residential receivers near the rail corridor in Henty.</p>
Biodiversity	<p>Construction</p> <p>The proposal would require the clearing of about 4.44 ha of native vegetation. This vegetation includes threatened ecological communities (TEC) listed under the <i>Biodiversity Conservation Act 2016</i> (NSW) (BC Act) and/or the <i>Environment Protection and Biodiversity Conservation Act 1999</i> (Cth) (EPBC Act), and areas used as foraging and breeding habitat for fauna species. The reduction in the extent of native vegetation is unlikely to threaten the persistence of any populations of native plants, vegetation or fauna communities. Offsets would be required due to the clearing of PCT 277 – Blakely's Red Gum – Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion, and impacts to four threatened fauna species (Squirrel Glider, Superb Parrot, Key's Matchstick Grasshopper and Sloane's Froglet).</p> <p>Temporary obstruction of fish passage associated with bridge and culvert works at Sandy Creek (Uranquinty Yard clearances) and Jeralgambeth Creek (June to Illabo clearances), would occur during construction. The removal of in-stream vegetation and large woody debris that may provide shelter, feeding and spawning habitat at Sandy Creek and Jeralgambeth Creek is predicted to further impact aquatic fauna habitat.</p>
Landscape and visual	<p>Construction</p> <p>The proposal would result in temporary changes to the landscape and visual amenity of the surrounding area during construction due to the removal of vegetation, general construction activities, earthworks, lighting for night works, and the presence of large machinery and equipment such as excavators, cranes and piling rigs; however, adverse impacts would be temporary and limited to the construction period. High–moderate adverse impacts would occur at</p>

Issue	Key potential impacts
	<p>Albury Station, Wagga Wagga Station and Kemp Street bridge enhancement sites, where more substantial bridge works would occur and where areas of public open space would be temporarily disrupted.</p> <p>Operation</p> <p>Once operational, the key landscape and visual changes would be associated with the new bridges and the more frequent and larger freight trains. These changes would be generally in character with the existing rail corridor and would not alter the use or amenity of the landscape. A high–moderate visual impact was identified at some viewpoints to the new pedestrian or road bridges at Albury (Albury Station pedestrian bridge) and Wagga Wagga (Edmondson Street bridge and Wagga Wagga Station pedestrian bridge). This was mainly to the taller structures as well as the larger and more frequent freight trains. The design of the proposed new bridges would be sympathetic to the surrounding environment and heritage characters of the area.</p>
<p>Hydrology, flooding and water quality</p>	<p>Construction</p> <p>During construction there is potential for activities associated with the construction of new culverts and a temporary creek crossing to temporarily disturb watercourses and reduce water quality in downstream catchments if not managed appropriately.</p> <p>The proposal site is partially located on flood-prone land. During construction there is potential for inundation of the proposal site affecting construction activities and infrastructure, including earthworks, compounds and stockpiles. This could pose a risk to construction workers and the public, and result in the mobilisation of construction materials in flood waters. Establishment of temporary construction infrastructure also has the potential to temporarily affect flooding behaviour; however, these impacts would be manageable with the implementation of mitigation measures.</p> <p>Operation</p> <p>Drainage works have been designed to mimic or improve the existing drainage, hydrology, flooding conditions and associated water quality impacts, where possible, to minimise the operational impacts of the proposal. During operation, there would be minor changes to flood conditions, overland flows and afflux conditions where the vertical alignment of existing track has been altered. In many cases, changes would result in minor improvements to existing rail flood immunity. An afflux increase in an industrial area downstream to the Wagga Wagga Yard clearances enhancement site is expected to be attenuated by an existing culvert that was not properly represented in the base flood model for the area. Further modelling would be completed during detailed design to confirm drainage at this location and compliance with the quantitative design limits. Overall, the proposal would not result in any broad-scale changes in flood behaviour.</p>
<p>Groundwater</p>	<p>Construction</p> <p>During construction, excavations are predicted to intersect the aquifer at two enhancement sites—Riverina Highway bridge and Kemp Street bridge. Dewatering at Riverina Highway bridge at Albury would result in an estimated take of 0.7 megalitres (ML) from the Upper Murray groundwater source. Dewatering at Kemp Street bridge would result in an estimated take of 11.4 ML from the Lachlan Fold Belt Murray–Darling Basin (MDB) groundwater source within one water calendar year. The assessment of the proposal's impacts on aquifers and GDEs in regard to the minimal impact considerations of the <i>NSW Aquifer Interference Policy</i> (Department of Primary Industries (DPI), 2012a) indicates the proposal complies with Level 1 criteria, which considers the potential impacts acceptable.</p> <p>Operation</p> <p>Groundwater is not predicted to be impacted during operation of the proposal given its depth and because the operational use as a rail corridor is comparable to existing land use activities. There remains a low to moderate risk of groundwater rising to the elevation of the track and potentially entering the surface water drainage network (known as groundwater seepage) at the Pearson Street bridge enhancement site under wetter climatic conditions.</p>
<p>Soils and contamination</p>	<p>Construction</p> <p>The proposal is located within an existing rail corridor, which has a general level of risk associated with contamination. Based on the intensity of historical activities observed within the rail corridor, enhancement sites within and surrounding Albury Station and Wagga Wagga Station have a higher likelihood of contamination being present. Equally, enhancement sites with more extensive excavation proposed (both area and depth), including Riverina Highway bridge, Billy Hughes bridge, Pearson Street bridge and Kemp Street bridge enhancement sites, may also have a higher likelihood for contamination to be encountered through the proposal.</p>

Issue	Key potential impacts
	<p>Construction would also temporarily expose the natural ground surface and sub surface through the removal of vegetation, overlying structures (such as existing roads) and excavation with potential for erosion impacts. Some sites contain dispersive soils or soils prone to high erosion hazard. Salinity is also known to occur in the proposal site and excavations at four locations along the proposal site could lead to increased salinity risk.</p> <p>Operation</p> <p>Operation is not likely to result in any significant impacts on soils, topography or geology.</p>
Aboriginal heritage	<p>The majority of the proposal site has been subject to substantial ground surface disturbance. Based on the desktop assessment and site inspection, two isolated stone artefacts were identified near the proposal site at Yerong Creek and Junee, and one area of archaeological potential was identified at the Murray River bridge enhancement site. The two isolated finds would not be directly impacted by the proposal and controls would be implemented to manage any indirect or inadvertent direct impacts during construction.</p>
Air quality	<p>Construction</p> <p>During construction, the proposal has the potential to generate dust emissions from construction works and the movement of construction vehicles. Potential dust impacts would be temporary and localised.</p> <p>Operation</p> <p>During operation, the increase in diesel-operated freight trains using the corridor has the potential to increase levels of pollutants such as nitrogen oxides and particulate matter. The air quality impact assessment considered the potential increases and concluded that the emissions are expected to be below the relevant impact assessment criteria.</p>
Cumulative	<p>The potential for cumulative impacts resulting from the interaction of the proposal with other projects, either existing or proposed, in the surrounding area is considered low.</p> <p>Projects planned to undergo construction concurrently and/or sequentially with the proposal, include the Inland Rail projects T2A and I2S, Thurgoona Link Road, Wagga Wagga SAP, and Project EnergyConnect (NSW – Eastern Section). During construction there could be minor cumulative traffic and amenity impacts associated with these projects north of Albury near Billy Hughes bridge, near Wagga Wagga and at Illabo. Potential cumulative impacts on short-term accommodation due to the concurrent construction of the proposal and I2S around Junee and Illabo would be managed through the workforce accommodation strategy for the Inland Rail program of works.</p> <p>Cumulative terrestrial biodiversity impacts have the potential to occur with Thurgoona Link Road, various solar farms, Olympic Highway intersection upgrades, Project Energy Connect and the Inland Rail project directly to the north (I2S). Clearing of native vegetation from these projects comprises approximately 1,640 ha, which includes a cumulative impact of up to 62 ha of the threatened ecological communities (TEC). The proposal would contribute a very small portion of the cumulative reduction of TECs in the region with impact on vegetation in moderate and derived condition.</p> <p>The majority of nearby projects would not impact any identified heritage items or values; however, several projects have the potential to cause impacts to both registered and unregistered heritage items. The projects with the potential to impact similar heritage values include the Inland Rail projects directly to the north and south, Wagga Wagga SAP and Junee Station upgrade. The removal of two unregistered bridges and one section 170 heritage register bridge as part of the proposal would add to the low cumulative impact on non-Aboriginal heritage in the region but is not expected to affect the wider cultural value of the rail line.</p>

28.3 Justification of the proposal

The SEARs and clause 192(1)(f) of the EP&A Regulation require an EIS to provide *‘the reasons justifying the carrying out of the development, activity or infrastructure, considering biophysical, economic and social factors, including the principles of ecologically sustainable development set out in section 193’*.

28.3.1 Strategic need

Demand for freight transport between Melbourne to Brisbane via inland NSW is expected to grow substantially over coming decades, from approximately 4.9 million tonnes in 2016 to around 13 million tonnes, or 1.1 million containers by 2050 (Infrastructure Australia, 2018).

About 70 per cent of the freight between Melbourne and Brisbane is carried by road, principally the Newell Highway in NSW, and connecting highways in Victoria and Queensland (Transport for NSW (TfNSW), 2015). The current road connection between Melbourne and Brisbane via inland NSW offers faster transit times than rail via Sydney (Infrastructure Australia, 2018).

There is no direct continuous inland rail link between Melbourne and Brisbane, with interstate rail freight travelling between Melbourne and Sydney via Albury, and then between Sydney and Brisbane, generally along the coast. Rail is generally the most productive and efficient mode for freight travelling from regional areas to export ports and urban destinations; however, the current rail connection between Melbourne and Brisbane, via Sydney, cannot offer the transit times and reliability required by industry. Without the increased use of rail, the growth in freight demand is likely to result in increasing pressure on the road network and associated issues, increased freight costs, and a loss of economic opportunity.

Inland Rail is needed to improve the efficiency of freight moving between Melbourne and Brisbane. Inland Rail would bypass the Sydney metropolitan area, it would substantially cut the overall journey time to less than 24 hours and increase the reliability of services between Melbourne and Brisbane (Infrastructure Australia, 2016). Inland Rail would be interoperable with train operations to Perth, Adelaide and other locations on the standard-gauge rail network to serve future rail freight demand and stimulate growth for inter-capital, and regional and bulk rail freight. This is expected to increase the competitiveness of rail transport relative to road transport and improve road safety, ease congestion, and reduce environmental impacts by moving freight from road to rail (ARTC, 2015a).

Inland Rail will deliver on key national priorities for infrastructure and economic policy. Inland Rail will provide a comprehensive and accessible rail transport system that links communities and strengthens industry. Better infrastructure and an effective national freight operation are key to delivering efficient supply chains, improving Australia's global competitiveness and lifting our nation's wealth and prosperity. Key benefits of Inland Rail are provided in Figure 28-1.

The proposal is required to enable the implementation of Inland Rail by enhancing and modifying rail and other infrastructure along the Inland Rail corridor to support the safe running of double-stacked freight trains between Albury and Illabo. By maximising the use of the existing rail corridor, the proposal would minimise the potential for environmental and community impacts during construction and operation.

The proposal, and Inland Rail more broadly, is supported and influenced by several strategic plans for transport infrastructure and regional development that have been prepared at the national, state and regional levels. The vision, objectives and development of Inland Rail and the proposal have been developed to be consistent with the key national and state strategies, policies and plans (described in Appendix B: Strategic planning review).

The benefits of Inland Rail

A more prosperous Australia with a world-class supply chain based on a fast, safe, reliable, connected Inland Rail.

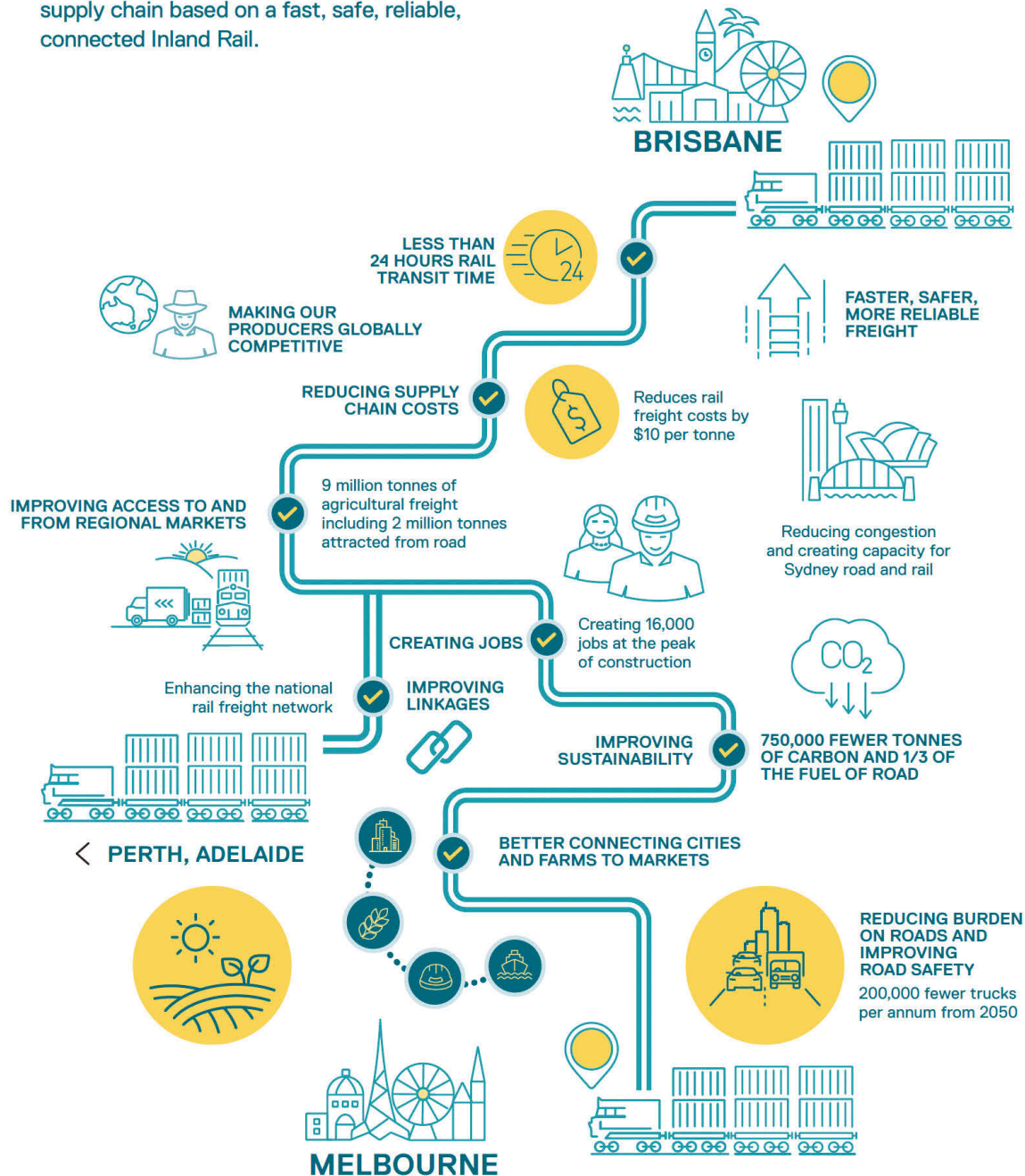


FIGURE 28-1 BENEFITS OF INLAND RAIL

28.3.2 Biophysical, economic and social considerations

A proposal of this scale would inevitably have some impacts on the environment, local community and economy, particularly during construction. Potential impacts of the proposal, based on the design and construction methodology, as described in Chapter 7: Proposal features and operation and Chapter 8: Construction of the proposal, are summarised in section 28.2.2.

The key biophysical potential impacts to the biophysical environment are identified to occur generally during construction. The proposal would remove 4.44 hectares (ha) of native vegetation, and biodiversity offsets would be finalised and implemented to address the residual impacts of the proposal on biodiversity values. Temporary impacts to watercourses, groundwater and air quality would occur during construction. Mitigation measures to address these impacts have been identified, including rehabilitation of disturbed areas, dust suppression, and erosion and sediment controls. As the proposal involves enhancement works on an existing rail line, biophysical

impacts during operation would not be significant. While the proposed increase in the number of trains would increase the emissions to air, the concentrations would be low and below the relevant criteria (as discussed in Chapter 22).

The proposal would have direct and indirect impacts to multiple non-Aboriginal heritage listed items, resulting in minor to moderate impacts to heritage except where bridges would be demolished – being the pedestrian bridges at three State heritage listed stations, one Section 170 heritage listed pedestrian bridge and two road bridges that have been identified as unregistered potential heritage items. The demolition of the bridges, which have been identified as either having their own individual heritage values or contributing to the heritage value of the landscape in which they are situated, would result in a major collective impact on railway heritage values. Additional opportunities to minimise heritage impacts through design or construction planning would be explored during detailed design, and heritage interpretation and management plans would be prepared. Where the avoidance of heritage items and archaeological sites is not possible, detailed recording and/or salvage excavation would be undertaken prior to construction.

The more significant impacts to the community during construction are predicted to be from noise, particularly during out of hours work on the rail corridor, and from traffic diversions during road bridge closures in Wagga Wagga and Junee. Other lesser amenity impacts during construction include dust and visual impacts. Construction impacts would be temporary and mitigation measures have been identified to reduce them. Operational amenity impacts are generally minimal as the proposal involves upgrade of an existing operational rail corridor and no permanent land acquisition is required. High–moderate visual impacts are predicted at viewpoints near Albury Station pedestrian bridge and Edmondson Street bridge as the new bridges at these locations would be taller and more visually prominent. Operational rail noise is predicted to generally comply with noise criteria; with mitigation proposed for the 15 receivers identified to experience exceedances.

Mitigation and management measures to minimise any outstanding impacts of the proposal are identified in this document. These measures, and the proposed approach to environmental management during construction and operation, are summarised in Chapter 27: Approach to mitigation and management.

The following benefits to the community and local economies as a result of this proposal have been identified:

- ▶ Construction of the proposal would employ around 770 workers during the 16-month construction period, of which around 10 per cent are expected to be sourced from local communities. A local and Indigenous industry participation plan will be implemented during construction.
- ▶ Construction of the proposal would create opportunities for the supply of materials and services in the regional study area.
- ▶ Improved accessibility across the rail corridor in Albury and Wagga Wagga through the provision of three new DDA-compliant pedestrian bridges and the inclusion of shared paths on the new road bridges in Wagga Wagga and Junee.
- ▶ Enhancement of the rail corridor between Albury and Illabo would enable Inland Rail to operate, and support operation of, intermodals and freight-related industries.

Inland Rail is fundamental to the continued growth of rail freight. It is estimated that Inland Rail will shift the share of freight moved by rail between Melbourne and Brisbane from 26 to 62 per cent, so that by 2050 about 7.9 million t of inter-capital freight will be moved by rail between the two cities (ARTC, 2015a). Inter-capital freight includes products such as hardware, steel, groceries and other consumer goods. It travels between major ports and capital cities before being distributed to retailers.

Inland Rail will address the growing freight task by helping to move freight off the congested road network and moving interstate freight off the congested Sydney suburban rail network. It provides a reliable road-competitive solution to the freight task and enables the commercial and social benefits of rail to be leveraged to meet Australia's long-term freight challenge.

Ecologically sustainable development

The EP&A Act adopts the definition of ecologically sustainable development contained in the *Protection of the Environment Administration Act 1991* (NSW). The following sections provides justification for the proposal, having regard to the principles of ecologically sustainable development defined by clause 193 of the EP&A Regulation.

Precautionary principle

The precautionary principle is defined as ‘...if there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation. In the application of the precautionary principle, public and private decisions should be guided by:

- ▶ careful evaluation to avoid, wherever practicable, serious or irreversible damage to the environment
- ▶ an assessment of the risk-weighted consequence of various options’.

A range of environmental investigations have been undertaken during the development of the proposal and the environmental assessment process (including an environmental risk analysis), to ensure that potential impacts are

understood with a high degree of certainty. The environmental assessment process has been informed by the environmental risk analysis provided in Appendix E: Environmental Risk Assessment. The assessment of the potential impacts of the proposal is considered to be consistent with the precautionary principle. The assessments undertaken are consistent with accepted scientific and assessment methodologies and have considered relevant statutory and agency requirements. The assessments have applied a conservative approach with regard to construction and operational arrangements, and the modelling used.

Lack of full scientific certainty has not been used as a reason to postpone or avoid identification and adoption of design or management measures to avoid or minimise environmental degradation. For example:

- ▶ Where potential suitable habitat for species credit species is present, the species are assumed present and appropriate offsets have been calculated.
- ▶ Where building conditions of sensitive receivers are unknown or final construction methodology is to be determined, the most conservative assumptions have been used in the noise modelling to predict noise levels during construction and operation.
- ▶ Monitoring and further investigation have been proposed to verify assessment findings, including groundwater and noise monitoring and survey for hazardous materials in the proposal site.

The proposal has been designed to avoid or minimise the potential environmental impacts. The design of the proposal was informed by an options evaluation process, which considered a range of environmental factors alongside engineering and operational requirements, and has responded to the findings of the assessments undertaken. Mitigation and management measures have been proposed to minimise potential impacts where impacts have not been avoided, and these management measures would be implemented during construction and operation. While not all environmental impacts have been avoided, no threat of serious or irreversible damage to the environment arising from the proposal has been identified.

Principle of inter-generational equity

The principle of inter-generational equity is defined as ‘...*the present generation should ensure that the health, diversity and productivity of the environment are maintained or enhanced for the benefit of future generations.*’

As outlined in Chapter 2: Strategic context and need, the delivery of Inland Rail will deliver social and economic benefits due to improved freight transport. The proposal would, as part of Inland Rail, benefit future generations by providing a safer, more efficient means of freight transport.

Construction of a long, linear infrastructure project, such as the proposal, has the potential for some degree of environmental and social disturbance. These disturbances include the clearing of vegetation, some disturbance to private properties during construction, construction noise, impact on heritage sites, and other localised impacts; however, the potential for environmental and social disturbance as a result of construction has to be balanced against the long-term benefits of the Inland Rail overall. The proposal optimises the use of an existing operational rail corridor and avoids the establishment of a greenfield rail corridor for the Inland Rail program, which would result in greater environmental impacts and changes to land use.

Conservation of biological diversity and ecological integrity

The principle of conservation of biological diversity and ecological integrity is defined as ‘...*conservation of biological diversity and ecological integrity should be a fundamental consideration.*’

Ecological studies have been undertaken to identify potential adverse impacts on biodiversity. Approaches to avoid and minimise impacts to terrestrial and aquatic biodiversity have been incorporated into the proposal during the options assessment and reference design development. The use of an existing operation rail corridor has minimised impacts to biodiversity, including further severance of habitats and vegetation corridors that a new transport corridor would create. Where potential impacts cannot be avoided, mitigation measures would be implemented to reduce the impact as much as possible. For example, installation of a glider pole on each side of the rail corridor would be further investigated to enhance habitat connection between patches of remnant vegetation for Squirrel Glider at the Billy Hughes bridge enhancement site north of Wagga Wagga.

A biodiversity assessment was undertaken in accordance with the *Biodiversity Assessment Method* (DPIE, 2020a) to identify potential adverse impacts on biodiversity. The proposal would result in the clearing of vegetation to facilitate construction. The proposal site has been refined to minimise this impact as much as possible, and conserve native vegetation and fauna habitat as far as practicable, while endeavouring to balance the potential for land use impacts. Mitigation measures are proposed to minimise and manage the significance of the impact on native vegetation and flora and fauna. Biodiversity offsets would be implemented to address the impacts that cannot be avoided.

Improved valuation, pricing, and incentive mechanisms

The principle of improved valuation and pricing of environmental resources is defined as ‘...*that environmental factors should be included in the valuation of assets and services.*’

The assessment has identified the environmental and other consequences of the proposal, and identified mitigation measures, where appropriate, to manage potential impacts. If approved, the construction and operation of the proposal would be in accordance with relevant legislation, the conditions of approval, and the CEMP and the operational environmental management framework. These requirements would result in an economic cost to the proponent. The implementation of mitigation measures would increase both the capital and operating costs of the proposal; this signifies that environmental resources have been included in the valuation of assets and services in the design and assessment of the proposal.

The value of environmental resources is also inherently considered in the development of a design that avoids and minimises impacts.

The reference design for the proposal has been developed with an objective of minimising potential impacts on the surrounding environment. The extra cost of designs, proposal elements, management measures and impact offset or mitigation packages, selected to avoid and minimise environmental and/or social impacts, are included in the total estimated proposal cost.

28.3.3 Objects of the Act

Table 28-2 outlines how the proposal meets the objects of the EP&A Act.

TABLE 28-2 OBJECTS OF THE EP&A ACT

Object	Comment
(a) to promote the social and economic welfare of the community and a better environment by the proper management, development and conservation of the State's natural and other resources,	Inland Rail will address the growing freight task by helping to move freight off the congested road network and moving interstate freight off the congested Sydney suburban rail network. It provides a reliable road-competitive solution to the freight task and enables the commercial and social benefits of rail to be leveraged to meet Australia's long-term freight challenge. Operational impacts from the proposal are minimised through the enhancement of an existing operational rail corridor with no permanent private land acquisition proposed.
(b) to facilitate ecologically sustainable development by integrating relevant economic, environmental and social considerations in decision-making about environmental planning and assessment,	Ecologically sustainable development is considered in section 28.3.2.
(c) to promote the orderly and economic use and development of land,	The proposal as part of Inland Rail is needed to respond to the growth in demand for freight transport, and address existing freight capacity and infrastructure issues. Inland Rail will deliver on key national priorities for infrastructure and economic policy, and provide a comprehensive and accessible rail transport system that links communities and strengthens industry. The proposal focused on enhancing an existing operational rail corridor. The proposal would increase the capacity of the Main South Line, which would provide economic benefits with minimal changes to land use.
(d) to promote the delivery and maintenance of affordable housing,	Not relevant to the proposal. This proposal does not involve development of housing or permanent occupation of residential zoned land.
(e) to protect the environment, including the conservation of threatened and other species of native animals and plants, ecological communities and their habitats,	By enhancing an existing rail corridor, impacts to native flora and fauna has been minimised. The proposal would remove 4.44 hectares (ha) of native vegetation, and biodiversity offsets would be finalised and implemented to address the residual impacts of the proposal on biodiversity values. Mitigation and management measures to minimise outstanding impacts on biodiversity would be implemented during construction and operation of the proposal.
(f) to promote the sustainable management of built and cultural heritage (including Aboriginal cultural heritage),	The proposal would avoid direct impacts to Aboriginal heritage sites; however, it would result in the removal, replacement and/or alteration of several items of non-Aboriginal heritage value. Across all enhancement sites, there would be a major cumulative impact due to the collective impact on railway heritage values. Opportunities to minimise impacts to railway heritage have been identified during options assessment, design and mitigation measures such as reusing material and further refinements to the design. Furthermore, the gifting of the Junee and Culcairn pedestrian bridges for the purpose of reuse elsewhere would be investigated with the relevant council prior to removal.

(g) to promote good design and amenity of the built environment,	The proposal involves enhancement of existing infrastructure with a majority of the proposal being track work. The proposal would provide improved accessibility across the rail corridor in Albury and Wagga Wagga through the provision of three new DDA-compliant pedestrian bridges and the inclusion of shared paths on the new road bridges in Wagga Wagga and Junee. During detailed design, an urban design and landscape plan would be prepared in consultation with councils and the community. The plan would guide appropriate urban design responses for key bridge infrastructure and landscaping approaches for the proposal. It would build on urban design, and landscaping objectives and opportunities that have been identified during design development for the proposed road and pedestrian bridges.
(h) to promote the proper construction and maintenance of buildings, including the protection of the health and safety of their occupants,	Not relevant to the proposal. No occupied buildings are proposed to be constructed or changed in this proposal.
(i) to promote the sharing of the responsibility for environmental planning and assessment between the different levels of government in the State,	Not relevant to the proposal.
(j) to provide increased opportunity for community participation in environmental planning and assessment.	ARTC undertook a range of engagement activities with the community and stakeholders during options development, reference design and preparation of the EIS. During these stages, the community was able to provide feedback via a range of channels including during in-person and online engagement sessions, and via the project email and phone line. ARTC will continue to consult the community and stakeholders during the proposal's development.

28.4 Concluding statement

The proposal is needed to support the development of Inland Rail. The proposal, as part of Inland Rail, is needed to respond to the growth in demand for freight transport and address existing freight capacity and infrastructure issues. The proposal is a critical component of Inland Rail and is required to enable Inland Rail to operate.

A proposal of this scale would inevitably have some impacts on the local environment and community, particularly during construction and as a result of undertaking enhancement works along an existing rail corridor. As described in Chapter 6: Alternatives and proposal options, Chapter 7: Proposal features and operation, Chapter 8: Construction of the proposal and Chapter 27: Approach to mitigation and management, the proposal would incorporate environmental management and design features to ensure that potential impacts are managed and mitigated as far as practicable. The majority of the potential construction-related impacts would be effectively mitigated by the implementation of best-practice construction management, including the implementation of the environmental management approaches described in section 27.2 and the mitigation measures compiled in section 27.3 of Chapter 27: Approach to mitigation and management. The potential remains for residual impacts, particularly as a result of construction noise at enhancement sites, the loss of some heritage fabric along the existing rail line, the traffic detours at Wagga Wagga and Junee, and changes to open space at Junee. Approaches to further reduce these impacts would be explored with key stakeholders during detailed design, and subject to further communication and engagement with potentially affected receivers during construction.

The biodiversity offsets would be finalised and implemented to address the residual impacts of the proposal on biodiversity values, according to the requirements for Division 5.2 projects under the EP&A Act.

To manage the potential impacts identified by the EIS, and in some cases reduce them completely, the assessment chapters outline a range of mitigation measures that would be implemented during construction and operation of the proposal. Chapter 27: Approach to mitigation and management summarises the mitigation measures that would be implemented. The environmental performance of the proposal would be managed by the implementation of the Construction and Operational Environmental Management Frameworks. These frameworks would also ensure compliance with relevant legislation and any conditions of approval.

The management measures in the CEMP would be monitored during construction to confirm their effectiveness and whether any additional measures are required. Environmental site monitoring would also be undertaken to confirm proposal impacts and existing environmental values in accordance with monitoring commitments made in this EIS. An auditing program would also be included in the CEMP, and be defined by this EIS and the conditions of the approval.

The residual impacts of the proposal are outweighed by the long-term benefits, including:

- ▶ enable Inland Rail to operate by making it possible for double-stacked freight trains to operate between Albury and Illabo
- ▶ provide improved accessibility across the rail corridor in Albury and Wagga Wagga through the provision of three new DDA-compliant pedestrian bridges and the inclusion of shared paths on the new road bridges in Wagga Wagga and Junee
- ▶ job creation during construction and flow-on benefits to the local economies around the enhancement sites.

The proposal, as part of Inland Rail, is needed to respond to the growth in demand for freight transport, and to address existing freight capacity and infrastructure issues. Inland Rail would provide the following key benefits:

- ▶ boost the Australian economy
- ▶ job creation
- ▶ provide better access to and from our regional markets
- ▶ offer better transit time and reliability for freight transport
- ▶ improve road safety by removing more trucks from the road network.

The design and the construction methodology would continue to be developed with the objective of further minimising potential impacts, taking into account the input of stakeholders and the community. The potential residual construction and operational impacts of the proposal are considered manageable with the implementation of the proposed mitigation and management measures.